

REMARKS

Reconsideration and allowance of the subject patent application are respectfully requested.

Applicants gratefully acknowledge the indication that claims 54 and 55 are allowable and that claims 9, 10 and 53 contain allowable subject matter.

Claims 1, 3, 5, 51 and 52 were rejected under 35 U.S.C. Section 102(b) as allegedly being "anticipated" by Yasukawa (JP 2001-255559). While not acquiescing in this rejection, claims 1 and 51 have been amended. As such, the discussion below makes reference to the amended claims.

Amended claim 1 calls for a semiconductor device comprising an insulating substrate having a surface on which a first SiO₂ film is formed; a single-crystal silicon thin film having bonded thereto a second SiO₂ film, which single-crystal silicon thin film is bonded with the insulating substrate on a partial region of the insulating substrate via the first and second SiO₂ films; and a non-single-crystal silicon thin film formed on the insulating substrate in a region where the single-crystal silicon thin film is not bonded with the insulating substrate, which non-single-crystal silicon thin film is formed on the insulating substrate via the first SiO₂ film and a third SiO₂ film. Claim 1 requires that *the second SiO₂ film and the third SiO₂ film are of different thicknesses.*

Illustrative non-limiting support for the italicized feature is provided by SiO₂ films 121 and 131, shown by way of example without limitation in Figure 1(h). Specifically, as described by way of example on page 21, lines 2-6 of the subject application, a 10nm thick SiO₂ film 131 is formed on the single-crystal silicon thin film 135. After the SOI substrate 150 is bonded with the insulating substrate 110, a 100nm thick SiO₂ film 121 is deposited on the insulating substrate 110, as described at page 23, lines 14-19. SiO₂ film 131 is provided between the single-crystal silicon thin film 135 and the insulating substrate 110 and SiO₂ film 121 is provided between the non-single-crystal silicon thin film 122 and the insulating substrate 110.

Yasukawa discloses a semiconductor device in which a single-crystal thin film is formed over the entire substrate and a portion of this thin film is later converted into a non-single-crystal

thin film by the selective injection of Si⁺ ions. In contrast to the above-italicized language of claim 1, Figure 4(9) of Yasukawa clearly depicts that the SiO₂ film 210b provided between the single-crystal silicon thin film 210e and the substrate 110 has the same (not different) thickness as the SiO₂ film 210b provided between the polysilicon thin film 210d and the substrate 110. Indeed, the SiO₂ film between the single-crystal silicon thin film 210e and the substrate 110 and the SiO₂ film between the polysilicon thin film 210d and the substrate 110 are the same film. Yasukawa does not disclose or even contemplate that different SiO₂ thicknesses be provided as claimed. Consequently, Yasukawa cannot anticipate claim 1 or its dependent claims 3 and 5.

Amended claim 51 calls for a semiconductor device comprising an insulating substrate having a surface on which a first SiO₂ film is formed; a single-crystal silicon thin film having bonded thereto a second SiO₂ film, which single-crystal silicon thin film is bonded to the insulating substrate via the first and second SiO₂ films, the single-crystal silicon thin film having a substantially uniform thickness and a substantially damage-free surface; and a non-single-crystal silicon thin film formed on the insulating substrate in a region where the single-crystal silicon thin film is not bonded with the insulating substrate, which non-single-crystal silicon thin film is formed on the insulating substrate via the first SiO₂ film and a third SiO₂ film. Claim 51 requires that *the second SiO₂ film and the third SiO₂ film are of different thicknesses*. As explained above with respect to claim 1, Yasukawa fails to disclose or suggest at least the italicized feature of claim 51. Consequently, Yasukawa cannot anticipate claim 51 or its dependent claim 52.

Claim 4 was rejected under 35 U.S.C. Section 103(a) as allegedly being "obvious" over Yasukawa. The office action maintains that the thickness range of claim 4 would have been obvious. However, even assuming for the sake of argument that the claimed thickness was provided for the arrangement of Yasukawa, Yasukawa would nonetheless be deficient with respect to claim 1 (from which claim 4 depends) for the reasons set forth above.

Claims 12-15 were rejected under 35 U.S.C. Section 103(a) as allegedly being "obvious" over Yasukawa in view of Yale (EP 0 559 389). The office action relies on Yale as allegedly showing the features of the insulating substrate. However, the Yale document adds nothing to Yasukawa regarding, among other things, the thickness of the claimed second and third SiO₂ films as specified in claim 1 (from which claims 12-15 depend). As such, the proposed

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combination of Yasukawa and Yale would not have made the subject matter of claims 12-15 obvious.

The pending claims are believed to be allowable and favorable office action is respectfully requested.

Respectfully submitted,

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